

Even if the percentage of appointments not met are equal, the average completion interval could differ significantly. For example, once missed, BellSouth *could* focus their attention on completing BST service orders at the expense of CLEC service orders.

- BellSouth has made it clear that much of the data required to provide the average interval is readily and abundantly available, although some enhancements may be necessary to partition “next available appointment” orders.
- Port Availability: The only performance measure used to detect discrimination in a total facilities-based interconnection arrangement.
- Completed Order Accuracy
- Orders Held for Facilities

61. Maintenance: Maintenance performance measures depict two sub-processes: (1) trouble reporting and clearance and (2) network quality.

- Trouble Reporting: Trouble reporting performance measures describe how quickly and how well end-user trouble is cleared. Performance parity exists if a CLEC customer trouble is cleared with at least the same speed and quality as the BOC retail or subsidiary customer. This is a highly visible process to the end user and has significant impact on the end user’s perception of the service provider. Typical trouble reporting performance measures include the following:
  - Trouble Report Rate: Measured as the number of trouble reports per customer or access line per month (usually annualized). Data is gathered by product and market categories and can be analyzed by cause and other factors. This is the most important measure of service reliability and historically positively correlates with an end user’s perception of their local service provider.
  - Percent Repeat Reports: Measured as the percentage of end-user troubles on the same access line within an agreed number of days of the original trouble. Repeat

reports are a key indicator of maintenance process reliability and, historically, have a positive correlation with an end user's perception of local service provider quality. Studies have shown high correlation between repeat reports and repair errors occurring within 7-10 days and lower correlations beyond 10 days.

- **Percent Out of Service Over 24 Hours:** Measured as a percentage of out-of-service troubles cleared within 24 hours. This measure relates to Mean Time to Restore, but specifically measures parity in *out-of-service* restoral. Required by many state regulatory bodies.
- **Percent Missed Appointments:** Measures the percentage of trouble reports cleared after the promised appointment. Highly visible to end users. Requires that appointment times, once set, cannot be changed except by the end user.
- **Mean Time to Repair:** Measured as the average interval from trouble report to clearance. This is the key measure of trouble report cycle time. Should be gathered and reported on a product and market basis.
- **Trunks Restored Out of Interval:** Measures the percentage of CLEC trunks reported out of service and restored after an agreed-to interval. Important because it impacts the CLEC's ability to handle its traffic efficiently and with a high level of quality.
- **Maintenance OSS Availability:** Measures the available hours of the BOC's maintenance OSSs, as well as system reliability.
- **Maintenance Center Speed of Answer:** Measures the average time to reach a BOC repair service representative. An important measure of adequacy in a manual environment or in a mechanized environment where CLEC service representatives have a need to speak with their BOC peers.
- **Network Quality:** Network quality performance measures measure how well the BOC's network is maintained and whether the BOC's network performance discriminates against new entrants. Comparisons are between the performance distribution for the BOC's retail or subsidiary customers and the performance distribution for CLEC's customers. The

network can be thought to be comprised of three parts: switches, loops, and trunks.

Typical performance measures include Number of Major Network Events; System Signaling 7 (SS7) Link and Database Failures; Post Dialtone Delay; various transmission measures, including Loop Transmission Loss, Signal-to-Noise Ratio, Balance, and Idle Circuit Noise; and Blocked Call Attempts. Current network design, architecture, and operating systems making switching and transmission performance measure discrimination highly unlikely. Unless specifically reprogrammed to do so, the network is not likely to recognize the carrier "owner" of a call processing through it. In contrast, a key area for parity or adequacy concern is trunk blockage, where planning and engineering can have a bearing on individual carrier service quality.

- Percent Blocked Calls: Measures trunking grade (quality) of service. It relates to proper forecasting, engineering, provisioning, and maintenance of intraLATA and interLATA trunks. Generally a parity measurement because CLEC results can be compared to similar BOC trunk group results.

62. BellSouth proposes the following maintenance and repair performance measures:

- Trouble Report Rate: Proposed for resale, UNE, and trunks.
- Percent Repeat Reports: Trouble reports received within 30 days of the original report are included. Proposed for resale and UNE.
- Percent Out of Service Over 24 Hours: Proposed for resale.
- Percent Missed Appointments: In its permanent measurements, proposed for resale only, but included for UNE as well in its interconnection agreement with AT&T (Stacy Performance Aff. Ex. WNS-6).
- Mean Time to Repair: Proposed for resale, UNE, and trunks.
- Maintenance Center Speed of Answer: Not proposed in its permanent measurements, but included in its interconnection agreement with AT&T for both resale and UNE.
- Network Downtime, by network element: Included in its interconnection agreement with Time Warner.

- **Trunking Grade of Service Blocking:** Percentages are proposed for CLEC local service trunk group interconnection, BST local service trunk groups, and common transport trunk groups.

Where appropriate, BellSouth will disaggregate maintenance and repair performance measure results into two sub-categories, non-dispatch and dispatch out.

63. The only maintenance performance measure BellSouth has not proposed in its permanent measurements or in any interconnection agreement is:

- **Maintenance OSS Availability.**

64. **Billing:** Billing performance measures measure the timeliness, accuracy, and completeness of end-user billing records and wholesale bills. These are measures of performance adequacy, important because, once provisioned, billing is the most frequent and visible contact an end user has with the provider. Typical billing performance measures include the following:

- **Bill Timeliness:** Measures the percentage of end-user and wholesale billing records delivered on time.
- **Bill Accuracy:** Measures the percentage of accurate end-user and wholesale billing records.
- **Bill Completeness:** Measures the percentage of complete end-user and wholesale billing records.

65. BellSouth has not proposed any billing performance measures in its permanent measurements. However, it includes the following in its interconnection agreement with AT&T:

- **Bill Timeliness**
- **Bill Accuracy**
- **Bill Completeness**

66. **Other:** Toll and Directory Assistance performance measures measure the speed of response to CLEC customers by BOC operators and speed and accuracy of 911 database updates. They are measures of performance parity. Performance measures include the following:

- Operator Services Toll Speed of Answer: Measures raw interval in seconds or as a percentage under a set objective.
- Directory Assistance Speed of Answer: Measures raw interval in seconds or as a percentage under a set objective.
- 911 Database Update Timeliness and Accuracy: Measures the percentage of missed due dates of 911 database updates and the percentage of accurate updates.

67. BellSouth has not proposed any “Other” performance measures in its permanent measurements or in any interconnection agreements that I have reviewed. However, in its application, BellSouth commits to non-discriminatory access to 911 and E911 services and to maintaining its 911 database for CLECs on the same daily schedule it uses for its own end-user customers. It also commits to non-discriminatory access to Directory Assistance and other Operator Services call completion. (BellSouth Brief at 45)

### **C. MARKET PARITY**

68. Market parity: Market parity ensures that agreed-to performance measures present appropriate customer group comparisons between the BOC and CLECs. This requires the BOC to provide service to appropriate CLEC customer groups at least equal to that provided equivalent customer groups by its retail or subsidiary units. Customer groups generally fall into two categories: Geographic and Class of Service.

- Geographic parity requires that performance measures be identified and measured where a CLEC markets their products. If a CLEC offers service to an entire BOC region, appropriate performance measures would compare CLEC results to total BOC results. If a CLEC offers service to smaller geographic areas, appropriate performance measures would provide comparative BOC results for those areas.
- Class of Service parity requires that performance measures be identified and measured for end-user classes of service targeted by a CLEC. For example, if a CLEC targets only small-business customers, appropriate performance standards would provide BOC results for its small-business customers only for comparison purposes.

69. BellSouth proposes the following market disaggregation of its proposed performance measures results data:

- **Geographic:** BellSouth proposes to provide results on a company-wide and state-wide basis (Stacy Performance Aff. ¶ 33). The company should also commit to provide results for smaller geographic areas if a CLEC chooses to offer service in those areas.
- **Class of Service:** BellSouth proposes to provide results by “type of customer, i.e., consumer, small business, or large business.” (Stacy Performance Aff. ¶ 33)

#### **D. PRODUCT PARITY**

70. **Product parity:** Product parity ensures that agreed-to performance measures present the appropriate comparisons on a product basis between the BOC and CLECs. This requires that the BOC provide service to CLECs at least equal to that provided by its retail or subsidiary units, measured for the products a CLEC offers to end users. Product parity includes two dimensions: (1) interconnection arrangement, and (2) products or product families within those arrangements.

- Product parity requires that performance measures be identified, measured, and reported for agreed-to interconnection arrangements. This includes both Total Service Resale (“Resale”) and Unbundled Network Elements (UNE), including individual elements, element combinations, interim number portability, and platform.
- Product parity also requires performance measures be identified, measured, and reported for products or product families a CLEC offers to end users. Examples include POTS, Subrate data, HICAP data, Centrex, and ISDN. If a CLEC offers DS1 service to its end users as part of a UNE loop resale arrangement, the BOC would need to provide results for service provided to those customers and for its own DS1 customers.

71. BellSouth proposes the following product disaggregation of its performance measures results data:

- **Interconnection Arrangement:** Performance measures are proposed for resale and UNE, although not all measures have been proposed for both. No measures are proposed for total facilities-based CLECs.

- Products offered to end users: BellSouth proposes to provide results by “type of service provided, i.e., POTS (also referred to as non-designed), and designed or special services” (Stacy Performance Aff. ¶ 33). BellSouth should further commit to provide results for *any* specific product a CLEC chooses to provide end users in South Carolina..

## **E. REPORTING REQUIREMENTS**

72. Reporting requirements should ensure that performance measures are reported in a way that will allow CLECs and regulators to identify whether parity and adequacy have been achieved. Dimensions include (1) availability of data, (2) entities compared, (3) report frequency, (4) report accuracy, and (5) report format.

- Availability of Data: Relates to the availability of partitioned BOC databases that allow CLECs to access performance measure results when and how they require it.
- Entities Compared: Appropriateness of results comparisons relate to the entities for which the data will be provided: BOC retail? BOC subsidiaries? the CLEC? all CLECs? other?
- Report Frequency: Report frequency relates to how often reports will be provided.
- Report Accuracy: Report accuracy and completeness relates to the statistical validity of the proposed data.
- Report Format: Report format relates to how performance standard results are presented. Are they presented in tabular or graphical form? Are they readable and understandable? Can a CLEC or regulator determine whether parity has been achieved? Have control limits been defined? How many standard deviations does the control limit represent? How many months of data are presented? Can trends be detected? How is result seasonality handled?

73. BellSouth proposes the following performance measure report parameters:

- Availability of Data: BellSouth has implemented a data warehouse that will allow CLECs access to performance measure results and raw data (Stacy Performance Aff. ¶¶ 13-15). This is an outstanding advance in creating an environment where CLECs are

not dependant on ILECs for the production of performance measure reports. BellSouth commits to provide access to all measurements described in Stacy's affidavit (Stacy Performance Aff. ¶ 15).

- Entities Compared: BellSouth proposes to provide "performance for CLECs in South Carolina, for all CLECs in BST's nine state region, and comparable total data for all of BST's retail customers." They also have included data for BST in South Carolina only (Stacy Performance Aff. ¶ 20). Although it is *not* clear in the application, I have assumed that "CLECs in South Carolina" includes results for *individual* CLECs. This is implied in its interconnection agreement with AT&T: "enable AT&T to compare BellSouth's performance for itself with respect to a specific measure to BellSouth's performance for AT&T for that same specific measure" (Stacy Performance Aff. Ex. WNS-4 ¶ 1.2).
- Report Frequency: Although the data warehouse will allow CLECs access to raw data at any time, BellSouth generally proposes to provide performance measure reports on a monthly basis.
- Report Format: BellSouth proposes to use statistical process control (SPC) to determine whether services are being provided at parity. Once enough historical data is collected, BellSouth will establish upper and lower levels of performance. Although BellSouth proposes SPC for parity measures, I have assumed, for purposes of this affidavit, that similar methodology will be used for adequacy measures where a "meaningful opportunity to compete" standard is used. BellSouth proposes that monthly variances in results will not be of any concern unless a CLEC is higher or lower than BST for three consecutive months or falls outside of the control limit in any one month. Should this occur, BellSouth commits to performing a "root cause analysis" to determine the reason for the variation.

SPC is an accepted method to reveal more than nominal variation in one-entity process results over time. Using SPC as a determinant of parity between two or more entities is less clear. BellSouth and individual CLECs should negotiate an agreement as



to what constitutes parity given the data that BellSouth has agreed to produce. For example: Does three standard deviations constitute the right range for being “in control”? Does being “in control” automatically mean that two entities are at parity?

## VI. CONCLUSIONS

74. BellSouth clearly has committed to provide service to its CLEC customers in a non-discriminatory manner. It further commits to collecting all the necessary data and providing reports to demonstrate parity or adequacy of results.

75. BellSouth proposes a robust set of performance measures for the maintenance and repair process, but less robust measures for provisioning and ordering. No measures are proposed for pre-ordering or billing (although billing measures are included in its interconnection agreement with AT&T).

76. BellSouth’s proposed market and product data disaggregation and their proposed performance measure reports and data availability are excellent.

77. Specific performance measures BellSouth should be required to provide include the following. “Include as an ongoing measurement” refers to performance measures included in interconnection agreements but not proposed as a permanent measurement. Critical measures are in italics, and bold face indicates additional emphasis:

- Pre-order OSS Availability
- *Pre-order System Response Times—Five key functions*
- *Firm Order Confirmation Cycle Time*: Complete state-specific development
- *Reject Cycle Time*: Complete state-specific development
- Total Service Order Cycle Time
- *Service Order Quality*: One or more suggested measures
- Ordering OSS Availability
- *Speed of Answer—Ordering Center*
- *Average Service Provisioning Interval*
- *Percent Service Provisioned Out of Interval*: Include as an ongoing measurement

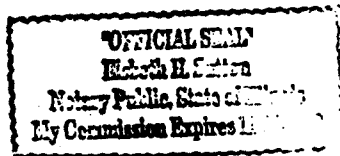
- Port Availability
- Completed Order Accuracy
- *Orders Held for Facilities*
- *Out of Service Over 24 Hours for UNE*
- *Repair Missed Appointment for UNE: Include as an ongoing measurement*
- Maintenance OSS Availability
- *Billing Timeliness: Include as an ongoing measurement*
- *Billing Accuracy: Include as an ongoing measurement*
- *Billing Completeness: Include as an ongoing measurement*
- Operator Services Toll Speed of Answer
- Directory Assistance Speed of Answer
- *911 Database Update Timeliness and Accuracy*

78. On the basis of the above shortfall, I conclude that BellSouth has not provided sufficient performance measures in its application to make a determination of parity or adequacy in the provision of resale or UNE products and services to CLECs in the state of South Carolina.

The information contained in this affidavit is true and correct to the best of my knowledge and belief.

Michael J. Friduss  
Michael J. Friduss

Subscribed and sworn to before me this 24<sup>th</sup> day of Oct, 1997.



Michael H. Salk  
NOTARY PUBLIC

My commission expires:

11/2/99